

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
13 January 2005 (13.01.2005)

PCT

(10) International Publication Number
WO 2005/003704 A1

(51) International Patent Classification⁷: **G01K 5/56,**
G01J 5/44

(21) International Application Number:
PCT/GB2004/002880

(22) International Filing Date: 2 July 2004 (02.07.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0315526.4 3 July 2003 (03.07.2003) GB

(71) Applicant (for all designated States except US): **QINETIQ LIMITED** [GB/GB]; Registered Office, 85 Buckingham Gate, London SW1 6PD (GB).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **COMBES, David, J.** [GB/GB]; QinetiQ Limited, Malvern Technology Centre, Room E9A1, St Andrew's Road, Malvern, Worcestershire WR14 3PS (GB). **BRUNSON, Kevin, M.** [GB/GB]; QinetiQ Limited, Malvern Technology Centre, Room E9A8, St Andrew's Road, Malvern, Worcestershire WR14 3PS (GB). **McNIE, Mark, E.** [GB/GB]; QinetiQ

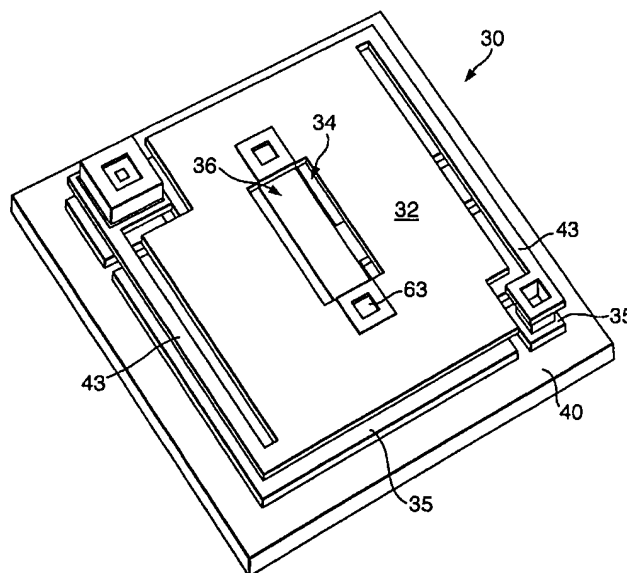
Limited, Malvern Technology Centre, Room E9A8, St Andrew's Road, Malvern, Worcestershire WR14 3PS (GB). **DAVIES, Rhodri, R.** [GB/GB]; QinetiQ Limited, Malvern Technology Centre, Room E9A8, St Andrew's Road, Malvern, Worcestershire WR14 3PS (GB). **TODD, Michael, A.** [GB/GB]; QinetiQ Limited, Malvern Technology Centre, Room E610, St Andrew's Road, Malvern, Worcestershire WR14 3PS (GB). **DONOHUE, Paul, P.** [GB/GB]; QinetiQ Limited, Malvern Technology Centre, Room A612, St Andrew's Road, Malvern, Worcestershire WR14 3PS (GB). **ANTHONY, Carl, J.** [GB/GB]; QinetiQ Limited, Malvern Technology Centre, Room A612, St Andrew's Road, Malvern, Worcestershire WR14 3PS (GB). **LEWIS, Keith, L.** [GB/GB]; QinetiQ Limited, Malvern Technology Centre, Room M340-1, St Andrew's Road, Malvern, Worcestershire WR14 3PS (GB).

(74) Agent: **DUNN, P., E.**; QinetiQ Ltd, IP Formalities, Cody Technology Park, A4 Building, Room G016, Ively Road, Farnborough, Hampshire GU14 0LX (GB).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,

[Continued on next page]

(54) Title: THERMAL DETECTOR



(57) Abstract: A device for detecting infrared radiation is described that comprises a resonator element (36; 72; 96; 120) fixably attached to a supporting frame (32;130). The supporting frame (32;130) is arranged to absorb infrared radiation received by the device. The resonator element (36; 72; 96; 120) has a resonant property, such as resonant frequency, that varies with temperature. The device may comprise a plurality of detection elements (70), each detection element comprising a resonator element (72) fixably attached to a supporting frame. A thermal detector array device may also be provided.



WO 2005/003704 A1



CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declaration under Rule 4.17:

— of inventorship (Rule 4.17(iv)) for US only

Published:

— with international search report

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.